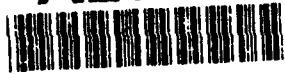AL-SR-1992-0012

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IMPLEMENTING TOTAL QUALITY MANAGEMENT (TQM) I: THE COMMAND IMPERATIVE

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This report documents the role senior leadership must play in the Total Quality Management/Methodology for Generating Efficiency and Effectiveness Measures (TQM/MGEEM) process and philosophy. Generally observed characteristics of DOD organization TQM implementations and their weaknesses are discussed. Successful TQM implementation depends on direct commander involvement in several areas of the TQM effort including training, empowerment through the Quality Council, establishment of measures, championing of TQM and the mission statement, and continual improvement efforts. Finally, the paper issues a call to action for the commanders, explaining that with their continual, visible commitment to a TQM effort, all else will follow and without this type of commitment, any efforts toward TQM are doomed to failure.

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Preface

The information reported here on Total Quality Management/ Methodology for Generating Efficiency and Effectiveness Measures (TQM/MGEEM) is part of the Armstrong Laboratory's program to provide tools and technologies to measure and enhance organizational quality and effectiveness. TQM/MGEEM is a significant breakthrough in quality measurement which provides a powerful set of new tools for improved leadership and management and a means of periodically soliciting worker input to identify barriers to performance.

This is the first in a series of four special reports (SRs) designed to document TQM/MGEEM. This report is intended for commanders and leaders of organizations and describes their primary responsibilities and what is necessary to start a TQM/MGEEM effort. The second report provides TQM facilitators with a step by step guide to the measurement system development process that is an integral part of TQM/MGEEM. The third report explains to leadership and facilitators how a TQM/MGEEM measurement system is used to institute and cultivate a climate of continual improvement and how Process Improvement Teams (PITs) fit into the TQM/MGEEM picture. The fourth report, intended as a general reference work for both leadership and facilitators, provides additional details on numerous aspects of the TQM/MGEEM technology, TQM and measurement philosophy, and several of the techniques found in the TQM/MGEEM system.

The authors thank Mr. Larry T. Looper for his invaluable ombudsmanship to our projects. We would like to especially thank the scores of people at conferences, presentations and test sites that have provided valuable insight and feedback toward the continual improvement of both TQM/MGEEM and our presentation of it.

Implementing Total Quality Management (TQM) I:
The Command Imperative

Introduction

This guide is the first of a series of special reports dealing with the subject of Total Quality Management (TQM) and the Methodology for Generating Efficiency and Effectiveness Measures (TQM/MGEEM). This guide is meant to explain in concise terms the actions a commander must take if he or she is to truly adopt the TQM philosophy. This is not easy, but the gains in customer satisfaction and product and service quality are well worth the effort.

The second report in this series, subtitled "A Facilitator's Guide" provides a step-by-step guide for use by facilitators in building a TQM/MGEEM measurement system (Weaver & Upton 1992a). The third report in this series, subtitled "Feedback and Continuous Improvement" provides information on the use of TQM/MGEEM as a vehicle for gathering and disseminating feedback and for continuous improvement of processes (Weaver & Upton 1992b). The fourth report is a general reference work providing more detailed explanations of TQM/MGEEM, how it relates to TQM philosophy, and other topics (Weaver, Upton & Frank 1992).

It is assumed that the reader already has a basic knowledge of what TQM is and is currently embarked on a search for methods to turn these ideas into reality. If more information on TQM in general is desired, there are a plethora of excellent sources that can provide this. For a partial listing of these sources and a brief description of what they offer, please refer to "Appendix B: Annotated TQM Bibliography" in Weaver, Upton & Frank (1992). TQM/MGEEM is documented for the private sector in a book by Weaver (1991) published by the American Society for Quality Control.

Why Commanders Must Be Involved

TQM cannot be delegated. TQM is not a program that can be farmed out as an additional duty to some junior officer. Neither is TQM something commanders can give to an officer who is about to retire to keep him or her busy. The primary responsibility for making or breaking a TQM effort rests solely on the commander of the organization (see Appendix A for further amplification on this topic).

The philosophy of TQM is best elucidated by Dr. W. Edwards Deming in various books, lectures and video tapes. The essence of his teaching can be found in his famous "14 points." Study of Point 14, "Take action to accomplish the transformation," (as well as the remainder of the 14 points) yields the inescapable conclusion that success requires senior leadership involvement in all steps of a TQM effort (Deming, 1986).

Implementation Methods

Two basic TQM implementation methods are generally observed in Department of Defense (DoD) organizations. The first is loosely based on the teaching of Dr. J.M. Juran and involves setting up a senior management group, often called a Quality Council or Steering Committee which uses judgment to set up teams (called Process Action Teams - PATs, Process Improvement Teams - PITs, Process Improvement Groups - PIGs, etc.) in order to solve problems and/or improve processes (Juran, 1989). The second is loosely based on the implementation suggestions of Dr. Deming and involves setting up a quality training program and sometimes hiring a "master statistician" (Deming, 1986). Both of these approaches are useful and many DoD organizations have made great strides using them. These approaches, however, have their limitations.

Steering Committee/Improvement Team Approach

An observed weakness of the Steering Committee/Improvement Team approach is that it is very easy for commanders to find themselves left out of the action; their responsibilities usurped by short term pressures. Leadership is perceived as filling the TQM "square" by setting up the committees and teams and then returning to work as usual, thereby dooming TQM to a slow and agonizing death. Another weakness of the Steering Committee/ Improvement Team approach is that the teams (PATs, PITs or PIGs) are almost always set up based on judgment alone, often to make short term fixes instead of studying and improving processes. This leads eventually to a point where quality improvement becomes a political chit to be maneuvered for without regard or knowledge of where limited resources can be best used to benefit the entire organization. Another common result of this approach is that teams usually work to solve problems often on a short-term basis. This leads to spotty improvement that is hardly different from the "fire-fighting" or "alligator killing" approach currently in style in American management. TQM calls for managers to "drain the swamp" and avoid problems through continual improvement of processes, rather than continuing to "kill alligators."

Philosophy and the Master Statistician

The second approach, teaching TQM philosophy and hiring a master statistician is also limited. One limitation is that there is no apparent structure to this approach, no road-map on how to get started and follow through. Commanders often confide that they are left with "a head full of concepts and philosophy" and a burning desire to get started, but no idea of where or how to begin or continue their TQM effort. Another problem with this approach is the requirement for hiring a master statistician, usually interpreted as meaning one of the TQM contractors that have begun to spring up all over the country. The biggest objection to this

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latter requirement is that the majority of problems within an organization can be addressed with statistical tools most of us learned in junior high and high school. According to the Japanese Union of Scientists and Engineers (JUSE), approximately 90% of an organization's quality and performance problems can be identified for solution with six of the so called "7 tools." Although the exact list may vary according to the presenter, the 7 tools usually include Ishikawa (or fish-bone or cause and effect) diagrams, Pareto charts (a type of bar chart), histograms (another type of bar chart), scatter diagrams, flow charts, control charts and run charts. With the exception of control charts, all these are easily constructed and used with little training. In fact anyone who makes a "to do" list and decides which items to tackle first is using Pareto analysis, even if they don't draw a bar chart for it. These arguments make hiring a master statistician a course that finds little support among commanders.

The First Steps

If the generally available TQM implementation methods are less than ideal, what is a commander in search of improving the quality of his unit to do? Increasingly, commanders throughout the DoD have begun to turn to a technique of TQM implementation developed at the Armstrong Laboratory, Human Resources Directorate, called the Methodology for Generating Efficiency and Effectiveness Measures (TQM/MGEEM). The methodology itself is part of an overall implementation strategy that has proven useful for TQM implementation in a myriad of DoD organizations. TQM/MGEEM does not replace knowledge of TQM philosophy or outlooks that one gets by studying Deming or Juran, but adds to their work by providing a rational TQM implementation plan and a system of measurement development, review and feedback that is in keeping with TQM philosophy and equally applicable to both service and production. A brief summary of TQM/MGEEM can be found in Appendix B with more complete documentation found in this document and its companion reports (Weaver & Upton, 1992a&b, Weaver, Upton, & Frank, 1992).

Training

TQM begins and ends with training. Continual training is a key to the success of any TQM effort. The first step in this training is taken by the commander when he or she begins to learn about TQM philosophy and tools. The commander then begins the training process in his or her organization in a "push-pull" manner.

The "push" part of this training involves the commander and later his or her senior staff members teaching TQM philosophy and tools to other members of the organization in a cascading manner. In other words, the commander would teach immediate subordinates and staff, immediate subordinates would teach their subordinates

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and their staff, etc. The commander and later the senior staff should regularly present briefings and write memos and articles about the philosophy and tools of TQM. Holding a half-day or full-day TQM orientation seminar for all members of the organization and having the commander and deputy commanders each present one or two of Dr. Deming's 14 points and/or the deadly diseases or obstacles is an excellent way both for senior leadership to learn about these topics and also to demonstrate to the organization members the importance of TQM.

The "pull" part of this training occurs as the commander and senior staff begin to incorporate TQM philosophy into their day-to-day work behavior. Nothing is more motivating to subordinates than to see their superiors using a technique or mentioning some idea (like one of the 14 points) in the context of their day-to-day work. Simple, informed comments like "wouldn't it have been nice to have a Pareto diagram on this?" or "are we violating Deming's point number 10?" can do wonders for a TQM training effort by demonstrating in a tangible way that TQM ideas are now part of the commander's thought processes. This also encourages subordinates to model this same behavior in their own work practices, encouraging them to find out about the tool the boss mentioned, or the point of philosophy spoken of. More will be said on this later in the section entitled "How to Make or Break the Effort."

As with any other facet of good officership, the leadership and management philosophy, techniques and tools of TQM should be constantly honed and added to. This process is never-ending, however a time will come when enough knowledge has permeated the organization, when the paradigms (world-view, guiding principles) of the senior leaders have become sufficiently flexible, that the climate will allow, even demand that something be started to formally begin weaving TQM into the fabric of the organization.

The Quality Council

When senior leadership has begun training, the first phase of a TQM/MGEEM implementation is started and the next action should be to establish quality councils. Quality councils should exist at each significant organizational level and be linked vertically through an organization by their members. For example, in a flying wing the group commanders who sit on the wing quality council would each chair a quality council at their own level, perhaps with squadron commanders as the mem-
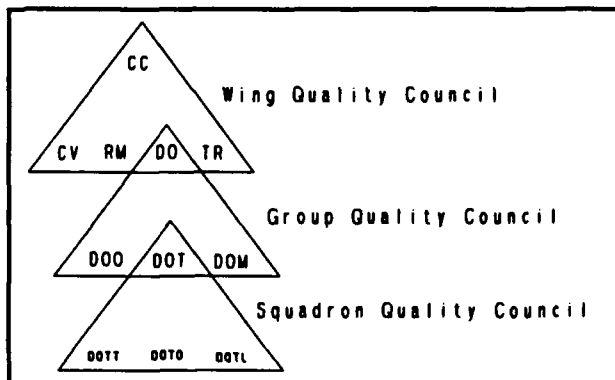

Figure 1. Vertical Linkage of Quality Councils.

bers. This vertical linkage can be viewed as a series of inter-locking triangles where the apexes (chairpersons) of the lower triangles (organization levels) are combined at the base of the next higher level's quality council (see Fig 1).

Each quality council should be chaired by that level's commander or manager and its membership include all those members who comprise the senior leadership of the unit. In a flying wing, the wing quality council would consist of the wing commander and his/her deputy commanders. The quality council serves as the policy-making board on all issues dealing with quality in the organization. The council is the central clearing house for quality education plans and provides the time, resources, review, coordination and eventual recognition and reward for personnel that engage in quality improvement activities.

Establishing a System of Measures

"If it cannot be expressed in figures; it is not science;
it is opinion"
-- Lazarus Long

What Lazarus Long said about science can also be said about quality and continual improvement. Without a system of measurement to gauge the quality of the work of an organization, quality improvement efforts become disorganized and inefficient because of the inability of the organization to determine where it is. It is analogous to trying to fly an airplane or drive a car without the aid of any instruments or maps, although you may get close to your destination and may not run into any fatal objects along the way, chances are that progress will be impaired and eventually an obstacle of some sort will come from "out-of-the-blue" to send the entire organization reeling.

To establish a system of measures to meet the unique improvement needs of the target organization, a group called the Blue Team is constituted consisting of the target organization's commander, his or her immediate subordinates, the commander's immediate superior and representative customers and suppliers of the organization. The Blue Team reviews the target organization's mission statement and develops lists of the customers and suppliers critical to the success of that mission. The Blue Team then identifies a handful of Key Result Areas (KRAs) that break the mission statement into critical, measurable parts. Next the Gold Team, consisting of the commander's direct subordinates from the Blue Team and key workers from the organization meet. This team develops a set of indicators for the KRAs identified by the Blue Team and constructs a Mission Effectiveness (ME) chart for each indicator showing the policy of the organization on that indicator. These ME charts provide a powerful, graphical method to examine the measures built by the organization itself in their effort to continually improve their processes. A more detailed discussion of

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the work of the Blue and Gold teams can be found in Weaver & Upton, 1992a while discussion of the feedback sessions in which ME charts are examined as well as a description and explanation of the ME charts can be found in Weaver & Upton, 1992b.

How to Make or Break the Effort

A TQM effort is not easy. It depends on a continual, visible, strong commitment on the part of the organization's leaders in order to be successful. It often takes immense struggling against deeply entrenched systems and time-honored ways of doing things in order to overcome the organizational inertia of traditional, outmoded management ideals. On the other hand, a TQM effort is relatively easy to break, especially in it's infancy. All the commander has to do is show, by word or deed, that TQM is not at the top of his/her agenda and TQM will quickly become just another program; the measurement system will become a tool of traditional micro-managers to be gamed, ignored, and eventually scrapped when a leader truly committed to TQM finally rescues the unfortunate organization from its managerial morass.

TQM can easily be killed in an organization by misuse of the measurement system. The traditional philosophy of inspection and measurement needs to be completely altered, from measures imposed from above and reported up the chain of command, to measures developed at the level they will be used, with little or no movement of the raw data itself up or down the chain. A new measurement paradigm of "we need to continually improve, therefore we measure to track our progress" needs to be instituted. The old paradigm of attempting to build hyper-accurate, super-precise measurement systems must give way to one of needing only enough precision to serve as a basis for improvement, a paradigm that recognizes that "the most important figures. . .are unknown or unknowable" (Deming, 1986, p 121) must be incorporated into the organizational view. Continual improvement, even of organizations that are the best in their field, is a bedrock concept of TQM.

Another potential pitfall concerns feedback and review of an indicator system (see Weaver & Upton, 1992b for detailed explanations). If feedback sessions are ignored or the leadership does not approach them in a manner consistent with TQM philosophy, workers and middle managers will quickly learn to game and/or ignore the system of measures that has been built and the TQM effort will quickly fade from organizational consciousness. Feedback sessions must be conducted in an informative, non-threatening manner that allows discussion of customer needs and process improvement instead of blame-laying and scapegoating.

TQM in an organization can still be severely damaged or destroyed if Process Improvement Teams (PITs) are used unwisely. The first temptation leadership must resist is the wholesale chartering of PITs in order to address any problem that may arise.

The purpose of a PIT is the improvement of a process that has been previously identified by an indicator's ME chart as being in need of improvement, not general fire fighting. The second temptation to avoid with PITs is the tendency to start a PIT and then abandon or ignore its efforts. Leadership must provide training to newly chartered PITs that will allow them to use statistical tools to make the process speak. Leaders must actively solicit the PIT's ideas on ways to improve the process. If instead leadership takes the position of "this is the way we do things and you have to convince me to do them a better way" frustration on the PITs will run high and dissatisfaction with TQM in general will result, dooming the effort to the long parade of failed organizational development efforts.

In order to heighten the chances for a TQM effort's success, the commander and his/her staff need to show through word and deed that TQM is their primary motivation and goal. They need to educate themselves on the teachings of such TQM experts as Dr. W. Edwards Deming (1986) and Dr. J.M. Juran (1989) and become familiar with the statistical tools used in TQM (Brassard, 1989). As they learn and begin to incorporate this knowledge into their day-to-day work behavior, they will struggle individually and corporately over the implications of Dr. Deming's 14 points and other TQM concepts. They need to understand and communicate to their subordinates the relationship these concepts have with the unique organization they lead. As their understanding of TQM begins to grow and mature, and they begin to internalize this knowledge, it will begin to evidence itself in a change in the way they conduct themselves both to people outside the organization (customers and suppliers) and to the subordinates under them. Leadership will begin to proactively search for ways to improve the processes by which the organization does business; they will actively solicit feedback from both their customers and suppliers as well as the work force they are responsible for leading. They will stop blame-laying and scape-goating, asking instead "what in the system caused the workers to fail?" not "who caused the failure?" Subordinates will begin to see a need in their own work practices to learn about TQM philosophy and tools and will turn to a management that is knowledgeable and ready to provide needed guidance and training. All this will lead to a leadership that can be counted on to remove barriers which block workers from effective, quality performance. A central TQM concept is that system inefficiencies, not an inherent lack of desire prevents workers from producing quality.

The Never-Ending Commitment

TQM is not another program for leadership to fill in the boxes and then go on with business as usual. It is an organizational development effort that requires a never-ending commitment, a radical cultural revolution where the members of an organization engage in a new way of doing business. Specifically for the

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command staff, it involves commitment in three areas; training, championing and continual improvement of processes.

Training of Employees

Many times organizations spend hundreds of thousands of dollars on training for the work force and senior leadership gets an hour or two of training when they don't have anything better to do. This is another way to kill a TQM effort. One of the best ways to fulfill the knowledge requirements for leaders advocated by all the TQM experts while still providing the general awareness training that military organizations desire is to have senior leadership take an active role in the training process. As part of quality council meetings, members could take turns choosing a topic on which to address the rest of the council. After they briefly present their thoughts on that topic, it could be followed by a 15-20 minute discussion that would serve to reinforce the implications of that subject within the organization (Gitlow & Gitlow, 1987). Another option would be for each of the members of the quality council to take one or two of Dr. Deming's 14 points (1986) and do a 30-45 minute briefing on its' meaning and specific implications for the organization. These briefings could be videotaped for later use in training seminars within the organization. Another possibility would be to write a short article for publication in an organizational newsletter or the base newspaper. The possibilities are limited only by the creativity of the leadership involved.

Championing

Championing TQM. Leadership must fight whenever necessary to keep the TQM ideal alive. TQM must be woven into everything leadership does before they expect middle management to believe their commitment is more than just words. Senior leadership must make quality and continuous improvement their top priorities and use TQM techniques and philosophy in every decision they make for TQM to become a part of the organizational culture.

Championing the Mission Statement. It is probably no accident that the first of Dr. Deming's 14 points deals with the publishing of a mission statement and the need for top management to continually demonstrate their commitment to the ideals of that document (Deming, 1986). In a manner similar to an officer's oath to protect and defend the U.S. Constitution, the organization's leadership must protect and defend the ideals and concepts contained in the organization's mission statement. They should continually monitor the fitness of the mission statement, adjusting the wording when necessary to allow it to continue to be the rallying point and embodiment of the organization. Leadership should use the ideals and concepts contained in the mission statement as the foundation for every decision they make, continually striving to improve the processes by which the mission statement is fulfilled.

Continual Improvement of Processes

Continual improvement of processes in order to better meet customer expectations is key to the concepts of TQM. Weaver & Upton, 1992b is completely devoted to this most important topic. A brief overview of these ideas is presented here.

Regular feedback via a system of indicators. The system of indicators developed as part of the TQM/MGEEM effort serves as an effective "set of gauges" for leadership to understand where an organization is and how and where it can improve. If this is all the measurement system is used for however, its effectiveness will quickly be degraded as organizational members begin to fake, game and ignore it. In order to use the measurement system correctly in a TQM context, the data must be used to identify and improve the processes that drive the indicators as opposed to identifying "whipping boys" to shoulder the blame for a broken process. The measures should identify processes in need of improvement. If the actions for improvement are not obvious, or if a course of action is complex or involves several areas, a PIT may take over.

Positive action on PIT recommendations. If a commander constitutes PITs in the absence of a good indicator system and allows them to set out with inadequate training and file a report that is subsequently ignored by management, the members of the organization will quickly learn that TQM is being used as another smoke screen for micro-management. PITs will be seen as nothing more than a bone thrown to workers whenever management is about to impose a predetermined decision. Commanders must avoid the temptation to "do something" by creating PITs everywhere. Instead they should wait until a rational indicator feedback system is in place to identify processes in need of improvement before constituting PITs. Once such an indicator feedback system is in place, PIT members must have adequate training in the statistical tools they will need (Ishikawa, 1982 and Brassard, 1988) to identify barriers and determine where improvement is needed. The commander should actively solicit ideas using the philosophy of the Plan-Do-Study-Act cycle (Deming, 1986) for change from the PITs. The mindset should change from extensive justification needed to change the system to justification needed to not change the system in the suggested manner.

A Call To Action

TQM/MGEEM is not, to use Dr. Deming's words, "instant pudding". It is neither quick nor easy. It requires constant, visible, never-ending commitment from top leadership and often nothing short of a complete revolution in the culture of the entire organization. These are not changes that will occur overnight, or in a matter of weeks or even months (although some gains should be visible in that short a time). Although effectiveness improvements

may be evident in the short term, to change the organizational culture will require years of effort and significant investments in time, resources, and manpower. The increase in quality and mission effectiveness of Air Force organizations; however, is well worth the effort and the commanders that take the lead in implementing these ideals will be remembered as examples for the rest of the Air Force and the entire DoD to follow.

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Appendix A: The Characteristics of a TQM Organization

TQM "Musts"

A TQM organization must have knowledgeable senior leadership that has made the paradigm shift to the TQM leadership philosophy. With this, all other characteristics will follow, without it the entire TQM effort is doomed to failure. What is a paradigm and what are the characteristics of this paradigm shift? A paradigm is a set of strongly held rules and regulations in some area of life, a way of seeing the world, in this case in the area of leadership and management. As for the paradigm shift to the TQM philosophy, there are three major areas where this shift becomes evident.

The first is when senior leadership, especially the commander becomes personally involved in the TQM training effort. This demonstrates not only a personal comprehension of TQM philosophy and tools, but also demonstrates a commitment to the effort as a whole. Dr. Deming never stays in the room to teach a seminar to the leaders of a company unless the CEO is there as well. At the Armstrong Laboratory, trainers have found that the most effective training method in any organization is when the trainer shares the stage and the training responsibilities with the leadership of the organization, including the commander and vice-commander, who each present one or more of Dr Deming's points, deadly diseases or obstacles.

The second characteristic of the senior leadership paradigm shift is the internalization of TQM philosophy and tools by the commander and his staff. This takes the form of their use and encouragement of the use of the various TQM tools (Pareto charts, force-field analysis, Ishikawa diagrams, etc.) This ranges from the prioritized "to do" list (a simple form of Pareto analysis) to full-blown Process Improvement Teams who are encouraged to make multiple use of several of the tools in their efforts to improve their target process. A second form that this internalization takes is when TQM philosophy and ideals begin to invade and permeate the language and decision-making process of top leadership. When consideration of Dr Deming's points, or expectations of the customer become common topics of conversation and critical parts of the decision process, then senior leadership has begun to internalize these concepts and make the paradigm shift.

The third characteristic of this paradigm shift is the proactive work of senior leadership to alter the environment and structure of their organization to better meet the demands of this internalized TQM philosophy. This can take many forms, changing strict, "cut in stone" regulations to flexible, ever-improving guidelines, changing their demeanor from "convince me to change things" to "please tell me how to change things", changing their attitude from "do this for me so I can do my job" to "what do I need to do to help you do your job?" These are not easy changes to

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make and require a complete reshaping of all the internal rules by which a commander judges his/her environment, but this is required for an organization to make the transition.

TQM "Shoulds"

A TQM organization should have several characteristics in order to more easily fulfill the demands of it's TQM philosophy. One major "should" is a valid, quality-focused mission statement (i.e. customer expectation focused) that serves as a rallying point for workers and a guide for management. It should have a measurement system, not to measure to the fourth decimal point what it does, but in sufficient detail to serve as a basis for improvement. It should have a system in place that facilitates the continuous improvement demanded by TQM philosophy. It should have a system for customer feedback and input in order to better asses the quality of the organization's goods or services. It should have a system in place to help it build a more harmonious relationship with suppliers in order to increase the quality of inputs. It should have a TQM focal point or office to both demonstrate command's commitment to the effort and to serve as a multiplier of top leadership's training and quality consulting activities. Finally, the organization should have a program of TQM training for its middle management tier, in order to expand the TQM philosophy into this oft-neglected area.

TQM "Good to Haves"

Finally there are some characteristics that would be good for an organization to have if time and budget permit. It would be good for the organization to be able to afford a full time TQM training staff. It would also be nice if enough time and money were available to provide training in TQM philosophy and tools to organization personnel at the worker level.

The Wrong Way

Unfortunately, organizations often approach TQM in a backwards manr , instituting the "nice things" assuming the "shoulds" and completely ignoring the "musts". This leads to wasted time and money as well as increased frustration and disillusionment of the workers, who are often the only people trained in the tools and often even the philosophy. Until senior leadership, especially the organizational commander makes the paradigm shift everything else is in vain.

Appendix B: The Structure of a TQM/MGEEM Organization

The structure of a TQM/MGEEM organization is as varied as the organizations undertaking the effort, but some generalizations are possible and potentially helpful to the leadership of an organization embarking on such an effort. Generally a TQM/MGEEM effort is divided into four phases: (1) Leadership Commitment, (2) Blue Teams, (3) Gold Teams and (4) Feedback and Continual Improvement. This appendix documents the general structures of various teams that are established at each of these phases and provides a brief overview of their various tasks and purposes.

Phase One: Leadership Commitment

This is the initial phase of a TQM/MGEEM implementation. At this time the senior leadership of the organization receives training in the philosophy and tools of TQM, including TQM/MGEEM. They then form a Quality Council to provide policy and resources for the TQM/MGEEM effort. This council often has subordinate councils linked to it to provide vertical communications through the chain of command (Fig B-1). The members of the Quality Council also
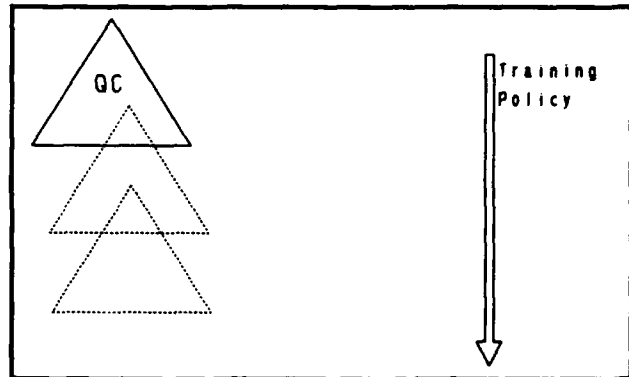

Figure B-1. Phase One: Leadership Commitment

are responsible for training their subordinates in Quality Philosophy. Although they can be assisted in this effort by a Quality focal point of some sort (i.e. an Executive Officer for Quality), the leaders themselves should take an active part in the training both to build their own understanding of the material as well as demonstrate to their subordinates the importance of the effort. The most important part of policy is the implementation plan that is developed by the Quality Council. Resource allocation and program direction grow out of this essential document. It is important for senior leadership to count the cost of the effort early, especially in regard to providing facilitators that will have both time, training and talent to serve the essential role they will play. Further details on the role of leadership and the Quality Council can be found earlier in this paper.

Phase Two: Blue Teams

As training begins to flow down through the organization, the TQM/MGEEM implementation plan developed by the Quality Council will call for the establishment of Blue Teams at the lowest levels of the organization. (Fig B-2). These Blue teams will meet to build the basis for a mission quality measurement system at their level. More information on Blue Teams can be found in Weaver & Upton

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(1992a). Sometime during this or the next phase, the Quality Council may wish to embark on their first Process Improvement Team (PIT) efforts. It is suggested that the first efforts be limited in scope and number for several reasons. Since these are the first such efforts in the organization, numerous false starts and pitfalls will be encountered by the PIT members as well as those trying to manage their efforts. Until more experience is gained by everyone involved, it is best to concentrate on relatively discreet projects where the problems are easily defined and tensions among the team members limited. Care should also be taken that "PIT proliferation" not occur while understanding of the PIT's purpose and limitations is still in its infancy. The Quality Council should limit itself to no more than 6 such efforts in order to give themselves experience without having non-PIT teams mislabeled. This mislabeling can cause extensive damage to the credibility of a TQM effort and is a potential barrier to later PITs if not avoided at this stage.
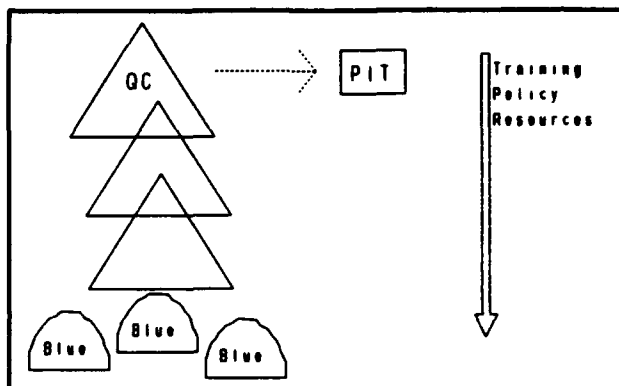
Figure B-2.   Phase Two: Blue Teams

Phase Three: Gold Teams

After the Blue Teams have met and built the foundations for the mission quality measurement system, Gold Teams are formed to develop the indicators and Mission Effectiveness (ME) Charts that will be used by the subordinate organizations to track their mission quality (Fig B-3). More is said about Gold Teams in Weaver & Upton, (1992a) and more about ME Charts in Weaver & Upton (1992b). Usually the pressure on leadership to "put their money where their mouth is" and prove their commitment to process improvement becomes so great by this time that the need to charter a few high-visibility PITs becomes unavoidable.
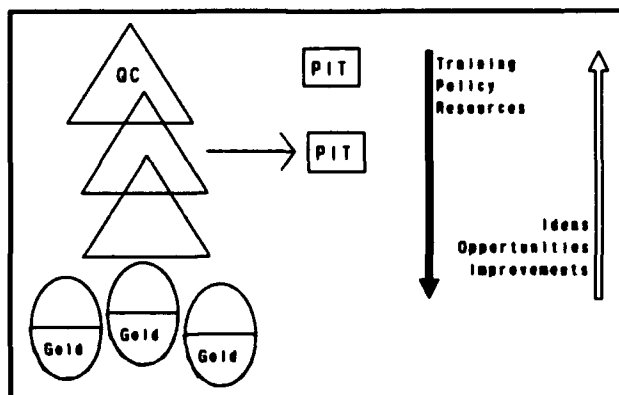
Figure B-3.   Phase Three: Gold Teams

As this begins to occur, each leader will find themselves at a critical crossroads. The training has continued to cascade down through the organization sparking a brave individual to offer an opportunity for improvement to leadership. These first suggestions

are critical for they will be viewed by subordinates as a litmus test of the true commitment of leadership to the ideals of TQM. If the suggestions are greeted in traditional fashion, they will see the TQM effort as lip-service only and will provide only lip-service support as well, dooming the effort to be just another in a long line of failed organizational development efforts. Answers of "we can't do that" or "we've always done it this way" or even a flat "I'm the boss and I say no" ar among the quickest ways of killing a TQM effort. Leadership should do everything possible to implement any suggestions that are advanced in as rapid a manner as possible and should think long and hard about potential rejections. If the suggestion is not possible or rational, a solid, detailed reason of the rational behind its rejection should be advanced, and if at all possible, alternate solutions implemented instead. Even solid, constructive criticism should be shared with extreme tact and care and leavened with generous praise so that suggesters are encouraged and their efforts affirmed while at the same time weaknesses in the suggestion are addressed.

Phase Four: Feedback and Continual Improvement

As the Gold Teams complete their work, they are replaced in the lower levels of the organization by Feedback Teams (Fig B-4). These teams provide the forum for continual improvement and horizontal communication at the lowest levels of the organization. At higher levels, Quality Councils concern themselves with optimizations that are not possible at lower organizational levels. Throughout the organization, opportunities for improvement are elevated to the appropriate level for action

Figure B-4. Phase Four: Feedback and Continual Improvement

either by the leadership directly or through the agency of a PIT. Initially, feedback teams will find that simple communication will suffice to solve most concerns identified by the ME Charts. Later, however, the Feedback Teams may find it necessary to charter PITs of their own to examine concerns and/or plan and monitor improvements.
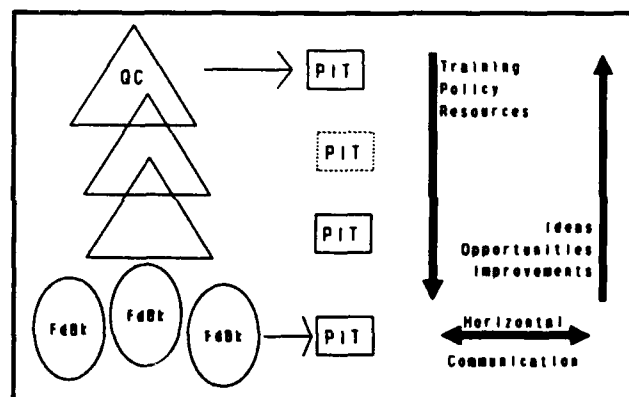
"More darn meetings"

A concern commonly voiced by people when they first begin learning about TQM/MGEEM is all the additional meetings it seems to involve. Although there are some additional meetings, especially in the beginning, most of these activities should be taking the place of traditional, non-TQM activities, not adding to them. For instance, the difference between a Quality Council meeting and a

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staff meeting at the same level should only be the difference in focus (from fire-fighting to continuous improvement). The way many organizations have addressed this is to make the Quality Council meeting take the place of one of the currently held staff meetings, or by adding it directly on to the beginning or end of a currently held staff meetings. Similar steps can be taken with the Feedback Team meetings, although because of the addition of customers and suppliers, the beginning of a staff meeting with release of the guests after their portion is complete usually works best. The addition of the PIT meetings should rapidly result in enough time savings to more than justify the time invested in them, and Blue and Gold teams, being transitional in nature, are an initial investment, not a continuing one. In short, saying "We don't have time for TQM" is an admission of ignorance of TQM, for if we have time to manage, we have time to manage in a quality manner.